

# **Plan Approval, Construction Standards & Significant Deficiencies**

Utah Division of Drinking Water

Nathan Lunstad, P.E.





# ***Presentation Topics***

- I. Division of Drinking Water Overview**
- II. Which Public Drinking Water Projects are Subject to Plan Review**
- III. Plan Approval & Operating Permit**
- IV. How to Qualify for Plan Submittal Waiver**
- V. Recent Changes to the Rules**
- VI. Resolve Significant Deficiencies**

**Director/Executive Secretary**  
Ken Bousfield  
(801) 536-4200  
kbousfield@utah.gov

**Eva Nieminski**  
(801) 536-4189  
enieminski@utah.gov

**District Engineers**  
David Ariotti  
John Chartier  
Scott Hacking  
Paul Wright

**Administrative Services**  
Kate Johnson  
(801) 536-4206  
katej@utah.gov

**Construction Assistance**  
Ken Wilde  
(801) 536-0048  
kwilde@utah.gov

**Engineering**  
Ying-Ying Macauley  
(801) 536-4188  
ymacauley@utah.gov

**Field Services**  
Kim Dyches  
(801) 536-4202  
kdyches@utah.gov

**Rules**  
Patti Fauver  
(801) 536-4196  
pfauver@utah.gov

Carolyn Esser  
(801) 536-4200 or 536-4190  
cesser@utah.gov

Heather Bobb  
(801) 536-0093  
hbobb@utah.gov

Mark Bertelson  
(801) 536-0087  
mbertelson@utah.gov

Margaret Hand  
(801) 536-4192  
mhand@utah.gov

Rachael Cassady  
(801) 536-4467  
rcassady@utah.gov

Mark Jensen  
(801) 536-4199  
mjensen@utah.gov

Julie Cobleigh  
(801) 536-4197  
jcobleigh@utah.gov

Steven Brenchley  
(801) 536-4201  
sbrenchley@utah.gov

Dave Hansen  
(801) 536-4203  
dfhansen@utah.gov

Mark Hansen  
(801) 536-4205  
mehansen@utah.gov

Jim Martin  
(801) 536-4494  
jhmartin@utah.gov

Michael Grange  
(801) 536-0069  
mgrange@utah.gov

Michael Georgeson  
(801) 536-0092  
mgeorgeson@utah.gov

Pete Keers  
(801) 536-4150  
pkeers@utah.gov

Cherie Heath  
(801) 536-0070  
crheath@utah.gov

Linda Matulich  
(801) 536-4208  
lmatulich@utah.gov

Jesse Johnson  
(801) 536-4195  
jjohnson@utah.gov

Bob Hart  
(801) 536-0054  
bhart@utah.gov

Michael Moss  
(801) 536-0089  
msmoss@utah.gov

Brad Holdaway  
(801) 536-0063  
bholdaway@utah.gov

Sandy Pett  
(801) 536-4212  
spett@utah.gov

Gary Kobzeff  
(801) 536-0099  
gkobzeff@utah.gov

Nagendra Dev  
(801) 536-0098  
ndev@utah.gov

Elden Olsen  
(801) 536-4097  
Eldenolsen@utah.gov

Janet Lee  
(801) 536-0088  
jjkeller@utah.gov

Rich Peterson  
(801) 536-4035  
richPeterson@utah.gov

Nathan Lunstad  
(801) 536-0039  
nlunstad@utah.gov

Don Lore  
(801) 536-4204  
dlore@utah.gov

Steven Onysko  
(801) 536-0096  
sonysko@utah.gov

John Oakeson  
(801) 536-0057  
joakeson@utah.gov

Russ Topham  
(801) 536-0095  
rtopham@utah.gov

Colt Smith  
(801) 536-4155  
acsmith@utah.gov

Jennifer Yee  
(801) 536-4216  
jyee@utah.gov

# Division of Drinking Water Organization Chart

## II. Projects Subject to Plan Review





# *Public Drinking Water Projects*

“Construction, Addition, and Modification” of Drinking Water Facilities — ***Plan Review Required***

## **1. Re-coating or re-lining storage tank interior**



# *Public Drinking Water Projects*

“Construction, Addition, and Modification” of Drinking Water Facilities — *Plan Review Required*

## 2. “In-situ” re-lining of pipeline





# *Public Drinking Water Projects*

“Construction, Addition, and Modification” of Drinking Water Facilities — *Plan Review Required*

## **3. A change or addition of treatment chemical**



# *Public Drinking Water Projects*

“Construction, Addition, and Modification” of Drinking Water Facilities — *Plan Review Required*

## **4. Redevelopment of a well or spring**





# *Public Drinking Water Projects*

“Construction, Addition, and Modification” of Drinking Water Facilities — *Plan Review Required*

## 5. Replacement of well pump with one of different capacity



# *Public Drinking Water Projects*

“Construction, Addition, and Modification” of Drinking Water Facilities — *Plan Review Required*

6. Deepen a well

7. Construct a new well or a replace a well





# *Public Drinking Water Projects*

“Construction, Addition, and Modification” of Drinking Water Facilities — *Plan Review Required*

## 8. Add a booster pump, or PRV, or a chlorinator



# *Projects Not Subject to Plan Review*

## *Ongoing O & M Procedures*





# *Ongoing O & M Procedures*

## *Plan Review **NOT** Required*

### 1. Pipeline leak repair



# *Ongoing O & M Procedures*

## *Plan Review **NOT** Required*

2. Replacement of existing pipeline
  - a) Same size pipe
  - b) **Upgrade to meet minimum pipeline sizes or larger sizes determined by a hydraulic analysis**





# Ongoing O & M Procedures

*Plan Review **NOT** Required*

3. Tapping existing water mains to connect new service laterals





# *Ongoing O & M Procedures*

## *Plan Review **NOT** Required*

4. Distribution pipeline addition <500' or total <1,000'/yr
  - a) Same size pipe
  - b) **Pipe size meeting minimum pipeline sizes or larger sizes determined by a hydraulic analysis**

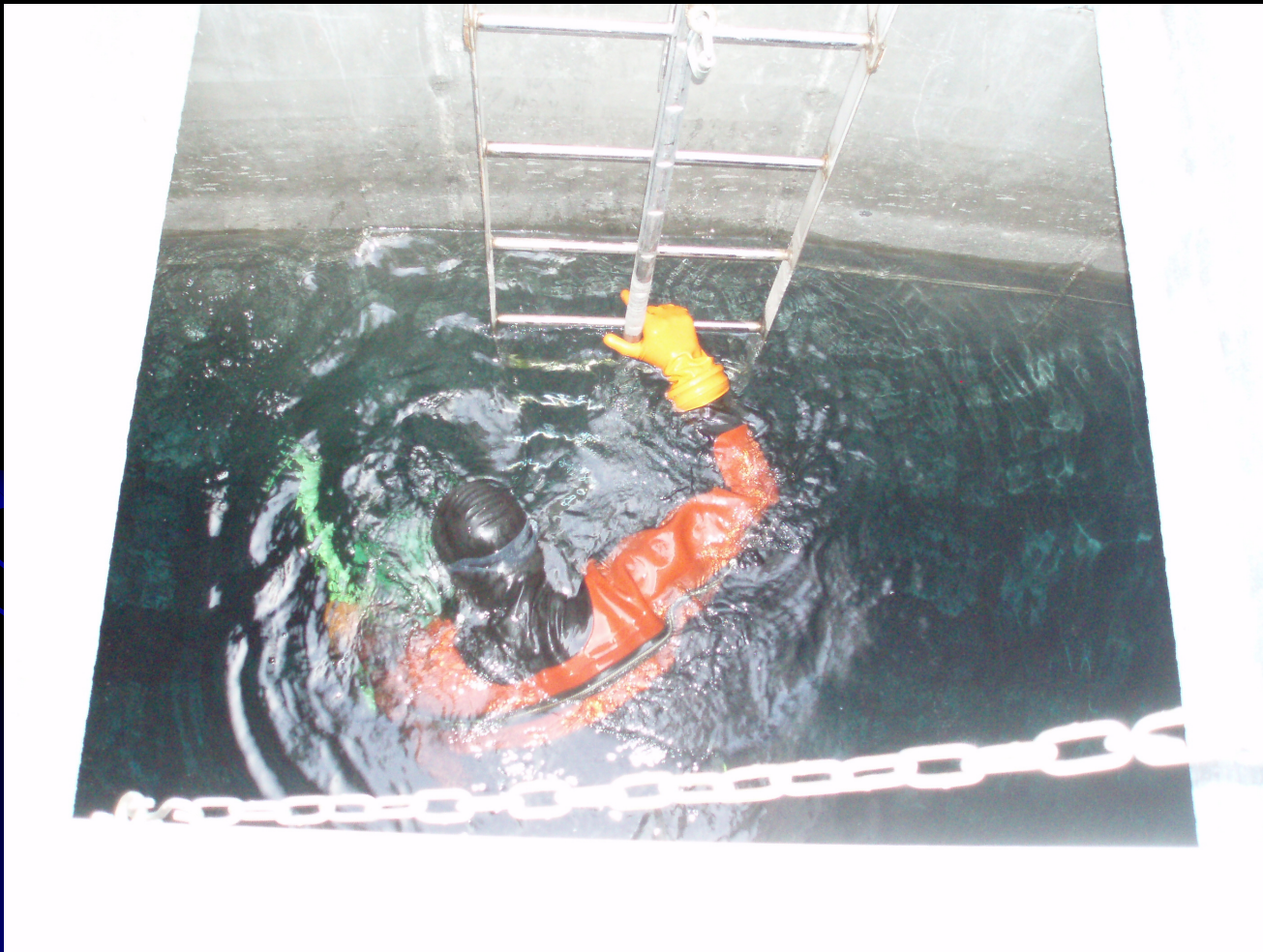




# *Ongoing O & M Procedures*

*Plan Review **NOT** Required*

5. Inspect, clean, and maintain a tank



# Ongoing O & M Procedures

## Plan Review **NOT** Required

6. Replacement of equipment or appurtenances of same type, size, and rated capacity



# III. Plan Approval & Operating Permit

## PROJECT NOTIFICATION FORM (PNF)

Please provide the following information for all Drinking Water Projects by existing PWS's  
Use with Plan Submittal [R309-500-6(1)] or when requesting Waiving of Plan Submittal [R309-500-6(3)]  
State of Utah - Dept of Environmental Quality - Division of Drinking Water  
P.O. Box 144830 • Salt Lake City, Utah • 84114-4830 • (801) 536-4200 • fax (801) 536-4211

File No:  
Date Rec'd:

<p><b>1 Name of PWS [owner of system as recorded with DDW]</b></p> <p>System Name: _____</p> <p>System Number: _____</p> <p>Address: _____</p> <p>City, State, Zip: _____</p> <p>Present No. of ERC's system is obligated to serve: _____</p> <p>Present No. of ERC's physically connected to system: _____</p> <p>Population Served: _____</p> <p>No. of ERC's this project will add to system: _____</p> <p><b>2 Addressee for Official Correspondence [Mayor, Public Works Director, etc...]</b></p> <p>Name: _____</p> <p>Title: _____</p> <p>Address: _____</p> <p>City, State, Zip: _____</p> <p>Phone No: _____</p> <p>E-Mail Address: _____</p> <p><b>3 PE designated as Direct Responsible Engineer for Entire System (if applicable)</b></p> <p>Company Name: _____</p> <p>Name: _____</p> <p>Address: _____</p> <p>City, State, Zip: _____</p> <p>Phone No: _____</p> <p>E-Mail Address: _____</p> <p><b>4 PE responsible for design of this Project [if not same as item 3]</b></p> <p>Name: _____</p> <p>Address: _____</p> <p>City, State, Zip: _____</p> <p>Phone No: _____ Fax No: _____</p> <p>E-Mail Address: _____</p> <p><b>5 Name of Construction Inspector(s) and frequency of inspection</b></p> <p>Name: _____</p> <p>Full Time: _____ Part Time: _____</p>	<p><b>6 Description of Project [in sufficient detail for DDW to identify]</b></p> <div style="border: 1px solid black; height: 100px; width: 100%;"></div> <p><b>7 Anticipated Construction Schedule:</b></p> <p>Bid: _____ Award: _____</p> <p>Start: _____ Completion: _____</p> <p><b>8 Is this PNF for plan review waiver? [see R309 500-6(3a) or (3b) to verify]</b> Yes No</p> <p><input type="checkbox"/> <input type="checkbox"/></p> <p>If Yes, either you must have (1) a previously approved Master Plan and Construction Standards or (2) a designated PE responsible for the system and previously approved Construction Standards.</p> <p>Does this project meet any of the criteria to be exempt from the hydraulic modeling rule requirements? [see R309 511-4(1)(a)(i) through (iv) to verify] Yes No</p> <p><input type="checkbox"/> <input type="checkbox"/></p> <p>If Yes, specify rule reference here: [for example, R309-511-4(1)(a)(i)] _____</p> <p><b>9 Fire Suppression Authority [if system has fire hydrants]</b></p> <p>Name: _____</p> <p>Address: _____</p> <p>City, State, Zip: _____</p> <p>Phone No: _____ Fax No: _____</p> <p>E-Mail Address: _____</p> <p>Req'd flow (gpm): _____ Duration (hrs): _____</p> <p><b>10 Funded by State or Federal Agency?</b></p> <p><input type="radio"/> Drinking Water Board (SRF or FSRF) Loan #: _____</p> <p><input type="radio"/> Community Impact Bond</p> <p><input type="radio"/> None</p> <p><input type="radio"/> Other (Specify) _____</p>
---	--

Revised: August 2010

[PNF = Project Notification Form; PWS = Public Water System; DDW = Division of Drinking Water; ERC = Equivalent Residential Connection; PE = Professional Engineer; SRF = State Revolving Fund]

## DIVISION OF DRINKING WATER OPERATING PERMIT CHECKLIST

With the exception of distribution lines (and distribution lines with booster pumps and pressure-reducing valves), the following items must be submitted and found to be acceptable for all projects:

- ☐ Utah Registered Engineer's statement of what plan changes, if any, were necessary during construction and Utah Registered Engineer's Certification of Conformance that all of these changes were in accordance with applicable Utah Administrative Code, namely, Rule Series 500, Drinking Water Facility, Construction, Design, and Operation.
- ☐ Utah Registered Engineer's R309-500-9 Certification of Rule Conformance that all conditions of plan approval (including conditions set forth by the Executive Secretary in any conditional approval letter) have been accomplished.
- ☐ As-built drawings have been received at the Division (unless no changes were made to the pre-construction drawings).
- ☐ Confirmation that as-built drawings have been received at the water system (unless no changes were made to the pre-construction drawings).
- ☐ Evidence of proper flushing and disinfection in accordance with the appropriate ANSI/AWWA Standard.
  - ☐ ANSI/AWWA C651-92 AWWA Standard for Disinfecting Water Mains
    - ☐ Two consecutive sample sets (each 1200 feet, end-of-line, each branch, etc.), none positive, at least 24 hours apart.
  - ☐ ANSI/AWWA C652-92 AWWA Standard for Disinfection of Water-Storage Facilities
    - ☐ One or more samples, none positive.
  - ☐ ANSI/AWWA C653-97 AWWA Standard for Disinfection of Water Treatment Plants
    - ☐ Two consecutive samples per unit, none positive, no less than 30 minutes apart.
  - ☐ ANSI/AWWA C654-97 AWWA Standard for Disinfection of Wells
    - ☐ Two consecutive samples, none positive, no less than 30 minutes apart.
- ☐ Water quality data, where appropriate.
- ☐ Water system owner has been provided with O&M manuals for any new facilities.

[Guidance: Storage tank water should be analyzed for residual volatile organic compounds used during tank interior painting or coating.]





# Plan Approval & Operating Permit

- Submit a “project notification form”

[Print Form](#)
[Submit by Email](#)

## PROJECT NOTIFICATION FORM (PNF)

Please provide the following information for all **Drinking Water Projects** by existing PWS's  
 Use with **Plan Submittal** [R309-500-6(1)] or when requesting **Waiving of Plan Submittal** [R309-500-6(3)]  
State of Utah - Dept of Environmental Quality - Division of Drinking Water  
 P.O. Box 144830 - Salt Lake City, Utah - 84114-4830 (801) 536-4200 fax (801) 536-4211

File No: \_\_\_\_\_  
 Date Rec'd: \_\_\_\_\_

<p><b>1 Name of PWS [owner of system as recorded with DDW]</b></p> <p>System Name: _____</p> <p>System Number: _____</p> <p>Address: _____</p> <p>City, State, Zip: _____</p> <p>Present No. of ERC's system is obligated to serve: _____</p> <p>Present No. of ERC's physically connected to system: _____</p> <p>Population Served: _____</p> <p>No. of ERC's this project will add to system: _____</p>	<p><b>6 Description of Project [in sufficient detail for DDW to identify]</b></p> <div style="border: 1px solid black; height: 100px; width: 100%;"></div>
<p><b>2 Addressee for Official Correspondence [Mayor, Public Works Director, etc...]</b></p> <p>Name: _____</p> <p>Title: _____</p> <p>Address: _____</p> <p>City, State, Zip: _____</p> <p>Phone No: _____</p> <p>E-Mail Address: _____</p>	<p><b>7 Anticipated Construction Schedule:</b></p> <p>Bid: _____ Award: _____</p> <p>Start: _____ Completion: _____</p>
<p><b>3 PE designated as Direct Responsible Engineer for Entire System (if applicable)</b></p> <p>Company Name: _____</p> <p>Name: _____</p> <p>Address: _____</p> <p>City, State, Zip: _____</p> <p>Phone No: _____</p> <p>E-Mail Address: _____</p>	<p><b>8 Is this PNF for plan review/waiver? [see R309 500-6(3a) or (3b) to verify]</b> Yes No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If Yes, either you must have (1) a previously approved Master Plan and Construction Standards or (2) a designated PE responsible for the system and previously approved Construction Standards.</p> <p>Does this project meet any of the criteria to be exempt from the hydraulic modeling rule requirements? [see R309 511-4(1)(a)(i) through (iv) to verify] Yes No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If Yes, specify rule reference here: _____  <small>[for example, R309-511-4(1)(a)(ii)]</small></p>
<p><b>4 PE responsible for design of this Project [if not same as item 3]</b></p> <p>Name: _____</p> <p>Address: _____</p> <p>City, State, Zip: _____</p> <p>Phone No: _____ Fax No: _____</p> <p>E-Mail Address: _____</p>	<p><b>9 Fire Suppression Authority [if system has fire hydrants]</b></p> <p>Name: _____</p> <p>Address: _____</p> <p>City, State, Zip: _____</p> <p>Phone No: _____ Fax No: _____</p> <p>E-Mail Address: _____</p> <p>Req'd flow (gpm): _____ Duration (hrs): _____</p>
<p><b>5 Name of Construction Inspector(s) and frequency of inspection</b></p> <p>Name: _____</p> <p>Full Time: _____ Part Time: _____</p>	<p><b>10 Funded by State or Federal Agency?</b></p> <p><input type="radio"/> Drinking Water Board (SRF or FSRF) Loan #: _____</p> <p><input type="radio"/> Community Impact Board</p> <p><input type="radio"/> None</p> <p><input type="radio"/> Other (Specify) _____</p>

Revised: August 2010 [PNF = Project Notification Form; PWS = Public Water System; DDW = Division of Drinking Water; ERC = Equivalent Residential Connection; PE = Professional Engineer; SRF = State Revolving Fund]



Print Form

Submit by Email

## PROJECT NOTIFICATION FORM (PNF)

Please provide the following information for all **Drinking Water Projects** by existing PWS's  
Use with Plan Submittal [R309-500-6(1)] or when requesting Waiving of Plan Submittal [R309-500-6(3)]

State of Utah - Dept of Environmental Quality - Division of Drinking Water  
P.O. Box 144830 - Salt Lake City, Utah - 84114-4830 (801) 536-4200 fax (801) 536-4211

File No:

Date Rec'd:

### 1. PWS Info

**1 Name of PWS [owner of system as recorded with DDW]**  
System Name: \_\_\_\_\_  
System Number: \_\_\_\_\_  
Address: \_\_\_\_\_  
City, State, Zip: \_\_\_\_\_  
Present No. of ERC's system is obligated to serve: \_\_\_\_\_  
Present No. of ERC's physically connected to system: \_\_\_\_\_  
Population Served: \_\_\_\_\_  
No. of ERC's this project will add to system: \_\_\_\_\_

### 2. Contact Info

**2 Addressee for Official Correspondence [Mayor, Public Works Director, etc...]**  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Address: \_\_\_\_\_  
City, State, Zip: \_\_\_\_\_  
Phone No: \_\_\_\_\_  
E-Mail Address: \_\_\_\_\_

### 3. PWS Engineer (optional)

**3 PE designated as Direct Responsible Engineer for Entire System (if applicable)**  
Company Name: \_\_\_\_\_  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City, State, Zip: \_\_\_\_\_  
Phone No: \_\_\_\_\_  
E-Mail Address: \_\_\_\_\_

### 4. Design Engineer

**4 PE responsible for design of this Project [if not same as item 3]**  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City, State, Zip: \_\_\_\_\_  
Phone No: \_\_\_\_\_ Fax No: \_\_\_\_\_  
E-Mail Address: \_\_\_\_\_

### 5. Inspector (optional)

**5 Name of Construction Inspector(s) and frequency of inspection**  
Name: \_\_\_\_\_  
Full Time: \_\_\_\_\_ Part Time: \_\_\_\_\_

### 6 Description of Project [in sufficient detail for DDW to identify]

### 6. Detailed Project Description

### 7. Schedule (optional)

### 7 Anticipated Construction Schedule:

Bid: \_\_\_\_\_ Award: \_\_\_\_\_  
Start: \_\_\_\_\_ Completion: \_\_\_\_\_

### 8 Is this PNF for plan review waiver? [see R309 500-6(3a) or (3b) to verify]

Yes No  
☐ ☐

If Yes, either you must have (1) a previously approved Master Plan and Construction Standards or (2) a designated PE responsible for the system and previously approved Construction Standards.

### Does this project meet any of the criteria to be exempt from the hydraulic modeling rule requirements? [see R309 511-4(1)(a)(i) through (iv) to verify]

Yes No  
☐ ☐

If Yes, specify rule reference here:  
[for example, R309-511-4(1)(a)(ii)]

### 8. Plan Submittal Waiver

### 8. Hydraulic Modeling Exemption

### 9 Fire Suppression Authority [if system has fire hydrants]

Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City, State, Zip: \_\_\_\_\_  
Phone No: \_\_\_\_\_ Fax No: \_\_\_\_\_  
E-Mail Address: \_\_\_\_\_  
Req'd flow (gpm): \_\_\_\_\_ Duration (hrs): \_\_\_\_\_

### 9. Fire Authority Info

### 10 Funded by State or Federal Agency?

- ☐ Drinking Water Board (SRF or FSRF) Loan #: \_\_\_\_\_  
☐ Community Impact Board  
☐ None  
☐ Other (Specify) \_\_\_\_\_

### 10. Funding

Revised: August 2010

[PNF = Project Notification Form; PWS = Public Water System; DDW = Division of Drinking Water; ERC = Equivalent Residential Connection; PE = Professional Engineer; SRF = State Revolving Fund]



## *Plan Approval & Operating Permit*

### **Submit plans and specifications**

1. Submit at least 30 days in advance.
2. Should be previously reviewed by the PWS for conformance with their own requirements.
3. The submittal should be made by the PWS.
4. DDW does not approve subdivision plats.
5. Should be final and complete for actual construction.
6. Stamped, signed, and dated by a Utah P.E.












## *Plan Approval & Operating Permit*

- No construction until **Plan Approval** issuance
  - 50 deficiency points for not obtaining Plan Approval
- Obtain **Operating Permit** prior to placing the facility in service
  - 50 to 150 deficiency points for not obtaining OP

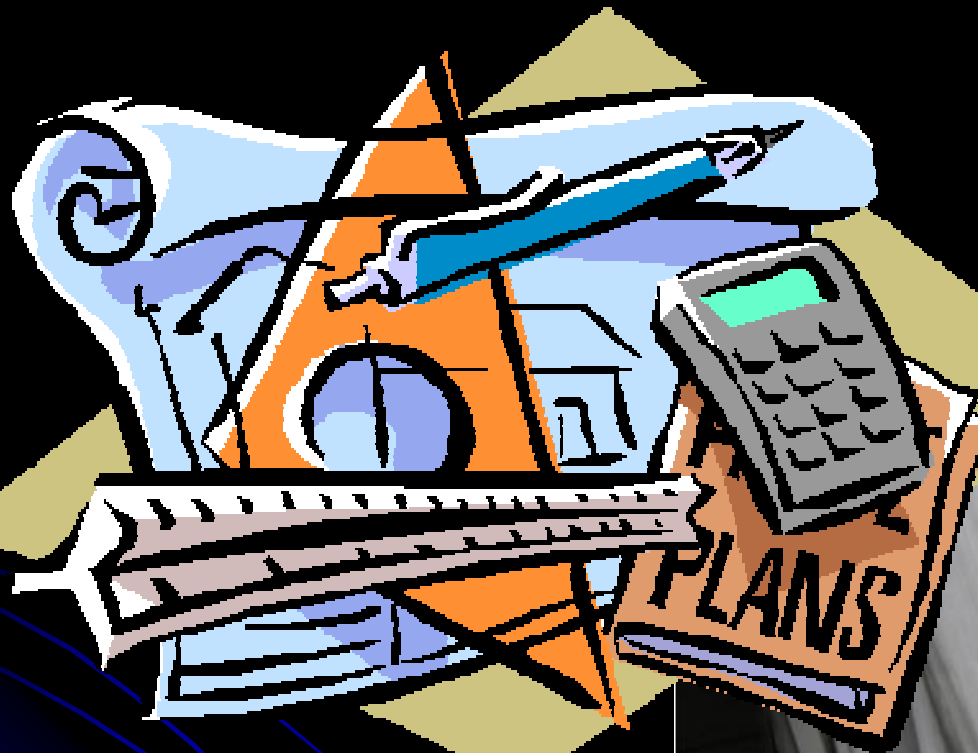
## DIVISION OF DRINKING WATER OPERATING PERMIT CHECKLIST

With the exception of ~~distribution lines~~ (and distribution lines with booster pumps and pressure-reducing valves), the following items must be submitted and found to be acceptable for all projects:

1. PE Statement of Changes  ☐ Utah Registered Engineer's statement of what plan changes, if any, were necessary during construction and Utah Registered Engineer's Certification of Conformance that all of these changes were in accordance with applicable Utah Administrative Code, namely, Rule Series 500, Drinking Water Facility, Construction, Design, and Operation.
2. PE Certification of Conformance  ☐ Utah Registered Engineer's R309-500-9 Certification of Rule Conformance that all conditions of plan approval (including conditions set forth by the Executive Secretary in any conditional approval letter) have been accomplished.
3. As-builts Submitted to DDW  ☐ As-built drawings have been received at the Division (unless no changes were made to the pre-construction drawings).
4. As-builts Received by PWS  ☐ Confirmation that as-built drawings have been received at the water system (unless no changes were made to the pre-construction drawings).
5. Evidence of Flushing and Disinfection  ☐ Evidence of proper flushing and disinfection in accordance with the appropriate ANSI/AWWA Standard.
  - ☐ ANSI/AWWA C651-92 AWWA Standard for Disinfecting Water Mains
    - ☐ Two consecutive sample sets (each 1200 feet, end-of-line, each branch, etc.), none positive, at least 24 hours apart.
  - ☐ ANSI/AWWA C652-92 AWWA Standard for Disinfection of Water-Storage Facilities
    - ☐ One or more samples, none positive.
  - ☐ ANSI/AWWA C653-97 AWWA Standard for Disinfection of Water Treatment Plants
    - ☐ Two consecutive samples per unit, none positive, no less than 30 minutes apart.
  - ☐ ANSI/AWWA C654-97 AWWA Standard for Disinfection of Wells
    - ☐ Two consecutive samples, none positive, no less than 30 minutes apart.
6. Submit other Water Quality Data if needed  ☐ Water quality data, where appropriate.  
*[Guidance: Storage tank water should be analyzed for residual volatile organic compounds used during tank interior painting or coating.]*
7. O&M Manuals given to PWS  ☐ Water system owner has been provided with O&M manuals for any new facilities.



## IV. Plan Submittal Waiver



# *Waiving Plan Submittal*

## *R309-500-6(3)*

- Distribution system improvements (excluding PRV & booster pump stations)
  - a) Previously approved master plan and standard installation drawings
  - b) Designated PE directly responsible for PWS  
Previously approved standard installation drawings  
Meeting limits of pipe size and population
- **Operating Permit** is still required even if a plan submittal waiver is granted.



Print Form

Submit by Email

# PROJECT NOTIFICATION FORM (PNF)

Please provide the following information for all **Drinking Water Projects** by existing PWS's

Use with Plan Submittal [R309-500-6(1)] or when requesting Waiving of Plan Submittal [R309-500-6(3)]

State of Utah - Dept of Environmental Quality - Division of Drinking Water

P.O. Box 144830 - Salt Lake City, Utah - 84114-4830 (801) 536-4200 fax (801) 536-4211

File No:

Date Rec'd:

**1** Name of PWS [owner of system as recorded with DDW]

System Name: \_\_\_\_\_

System Number: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Present No. of ERC's system is obligated to serve: \_\_\_\_\_

Present No. of ERC's physically connected to system: \_\_\_\_\_

Population Served: \_\_\_\_\_

No. of ERC's this project will add to system: \_\_\_\_\_

**6** Description of Project [in sufficient detail for DDW to identify]

**2** Addressee for Official Correspondence [Mayor, Public Works Director, etc...]

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Phone No: \_\_\_\_\_

E-Mail Address: \_\_\_\_\_

**7** Anticipated Construction Schedule:

Bid: \_\_\_\_\_ Award: \_\_\_\_\_

Start: \_\_\_\_\_ Completion: \_\_\_\_\_

**8** Is this PNF for plan review waiver?  
[see R309 500-6(3a) or (3b) to verify]

Yes No

☐

☐

If Yes, either you must have (1) a previously approved Master Plan and Construction Standards or (2) a designated PE responsible for the system and previously approved Construction Standards.

**3** PE designated as Direct Responsible Engineer for Entire System (if applicable)

Company Name: \_\_\_\_\_

Does this project meet any of the criteria to be exempt from the hydraulic modeling rule requirements?  
[see R309 511-4(1)(a)(i) through (iv) to verify]

Yes No

☐

☐

# V. Recent Engineering Rule Changes

- Hydraulic Modeling Rule
- Disinfection Rule
- Minimum Water Pressure
- Storage Volume
- Tank Vents



# *Hydraulic Modeling Rule*

## ***New Rule R309-511***

- Effective March 2010
- Rule Applicability
  - Community & NTNC systems with high demands
  - Checklist available
- Rule Elements
  - Hydraulic model
  - Engineer's certification
  - "Hydraulic Model Design Elements Report" or "System Capacity and Expansion Report"

## *Drinking Water Projects That Should Include Hydraulic Modeling*

- Water system expansion
- New Construction that is expected to have hydraulic impact
- Master Plan



# *Hydraulic Modeling Exclusion Criteria*

## *R309-511-4(1)(a)*

- i. No negative hydraulic impact
- ii. A part of a pre-approved master plan
- iii. Systems maintains a hydraulic model and has designated a P.E. who oversees the hydraulic analyses.
- iv. Real time data indicative of modeled hydraulic conditions

# ***Disinfection Rule***

## ***Amended Rule R309-520***

- Effective May 2011
- R309-110-4 Definitions
  - Add definitions of "detectable residual" and UV terminology.
- R309-520 Disinfection Rule
  - Substantial changes (from 14 to 31 pages long)
    1. Chlorination (chlorine gas, sodium hypochlorite, calcium hypochlorite, and on-site generation)
    2. Chlorine dioxide
    3. Ozone
    4. UV
  - UV Monitoring and Reporting Protocol

# *Minimum Water Pressures*

## ***R309-105-9***

- For PWS approved prior to 1/1/2007:
  - 20 psi minimum dynamic pressure at all locations during normal operation
  - Meet the new minimum pressures in new service areas
- New construction after 1/1/2007 at points of connection:
  - **20 psi with fire flow during peak day demand**
  - **30 psi during peak instantaneous demand**
  - **40 psi during peak day demand**
- Individual home booster pumps not allowed



# TW1000-10W-65 PRO SERIES

## 3/4 HP – 220 VAC

### RESIDENTIAL

### EXCELLENT WITH CISTERN AND STORAGE TANKS

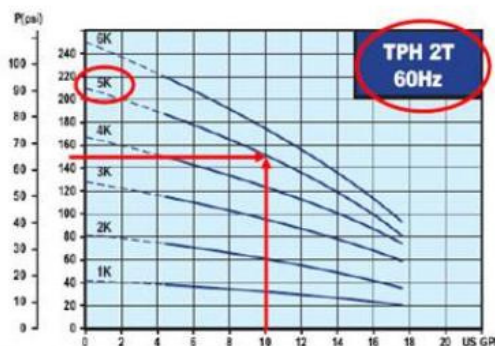
VARIABLE SPEED CRUISE CONTROL FEATURE  
PUMP WILL AUTOMATICALLY MAINTAIN DESIRED PRESSURE



#### Specifications:

Pump: Walrus of America #2T-5K  
Controller: Gould/ABB/Emerson  
Based on Availability  
Assembler: Towle Whitney LLC  
Power: 208-220V/1 PH/20Amp  
115V Optional  
HP: 3/4 HP  
Flow Rate: 10 GPM  
Boost: 65 PSI Over existing pressure  
Suction: 1"  
Discharge: 1"  
Tank: 2 Gallon  
All Parts Shown Included

Some Assembly required



TOWLE WHITNEY LLC  
ned@towle-whitney.com  
www.towle-whitney.com  
Toll Free: 800-807-9827  
Tel: 603-626-7371  
Fax: 603-626-7372

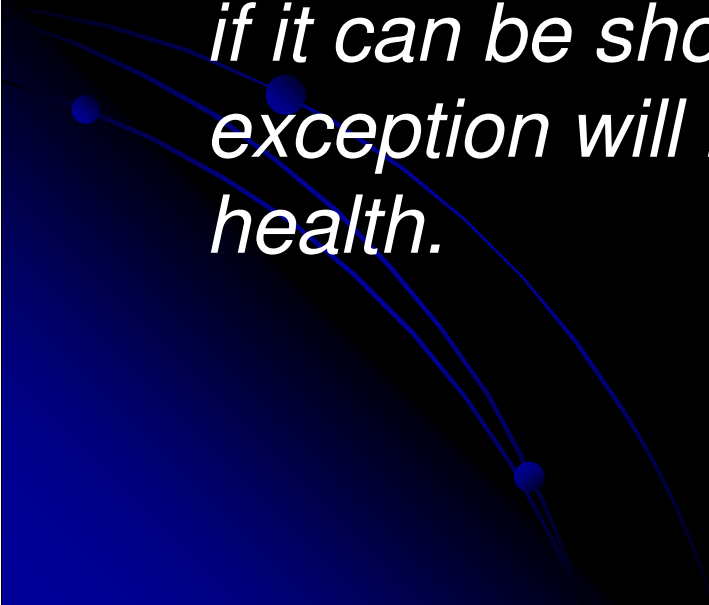
Actual system may vary  
from picture shown

Warranties are passed through and as published in the original equipment manufacturer's literature that is included with this system. In no event shall Towle Whitney LLC be liable for incidental or consequential damages, or limitation on how long an implied warranty lasts. It being intended that purchaser's exclusive remedy is limited to replacement of defective products. Water damage exclusion: It is understood that Towle Whitney LLC accepts no responsibility for water damage regardless of what or who caused water damage or any consequential personal injuries, liabilities or property damages resulting.

# *Individual Booster Pumps*

***R309-550-11(3)***

*Individual booster pumps **shall not be allowed** for any individual service from the public water supply mains. Exceptions to the rule may be provided by the Executive Secretary if it can be shown that the granting of such an exception will not jeopardize the public health.*



# *Individual Booster Pumps*

## *R309-550-11(3) Guidance*

- *Cross Connection Control Programs are required.*
- *May create a vacuum or low pressure in the water main causing backflow.*
- *DDW can not regulate the individual homeowner. PWS do not want to encourage the use of such pumps.*
- *Exceptions may be allowed where there is no other acceptable alternative.*
- *Each PWS should review language in the service agreements with customers. Perhaps modify to make it clear that such pumps are not allowed, unless the permission of the supplier and authorized by the Executive Secretary.*



# *Individual Booster Pumps*

- International Plumbing Code (IPC) & State Amendments

*Sections 602.3.5 and 602.3.5.1 on Individual Home Booster Pumps are deleted from the IPC*

# *Storage Volume?*



# *Hydropneumatic Systems*

## **R309-540-6(1)&(5)**

- Community systems & NTNC systems with a demand in excess of required source capacity
  - Require ground level or elevated storage
  - Provide at least two pumping units
- Community systems
  - Diaphragm or air pressure tanks are **NOT** for storage
- TNC & NTNC systems with sufficient source capacity
  - **Can** count hydropneumatic tank volume toward storage
  - **Not required** to have two pumping units



# Hydropneumatic System vs. Storage

- Example 1. Fablehaven Town ( \_\_\_\_\_ type PWS)

Hydropneumatic tank 3,000 gallons & 50% bladder capacity.

Effective water volume = \_\_\_\_\_ gallons

Can this water volume be counted toward storage volume? \_\_\_\_\_

- Example 1. Fablehaven Town (**Community** type PWS)

Hydropneumatic tank 3,000 gallons & 50% bladder capacity.

Effective water volume = **1,500** gallons

Can this water volume be counted toward storage volume? **NO**

# Hydropneumatic System vs. Storage

- Example 2. Fast & Furious Rest Stop ( \_\_\_\_\_ PWS)

Hydropneumatic tank 3,000 gallons & 50% bladder capacity.

Effective water volume = \_\_\_\_\_ gallons

Can this water volume be counted toward storage volume? \_\_\_\_\_

- Example 2. Fast & Furious Rest Stop (**TNC** PWS)

Hydropneumatic tank 3,000 gallons & 50% bladder capacity.

Effective water volume = **1,500** gallons

Can this water volume be counted toward storage volume? **YES**

# Hydropneumatic System vs. Storage

- Example 3. Kiddie School ( \_\_\_\_\_ PWS)

System peak day demand = 200 gpm

Historical low spring flow = 300 gpm

Hydropneumatic tank 3,000 gallons & 50% bladder capacity.

Effective water volume = \_\_\_\_\_ gallons

Can this water volume be counted toward storage volume? \_\_\_\_\_

- Example 3. Kiddie School (**NTNC** PWS)

System peak day demand = 200 gpm

Historical low spring flow = 300 gpm

Hydropneumatic tank 3,000 gallons & 50% bladder capacity.

Effective water volume = **1,500** gallons

Can this water volume be counted toward storage volume? **YES**



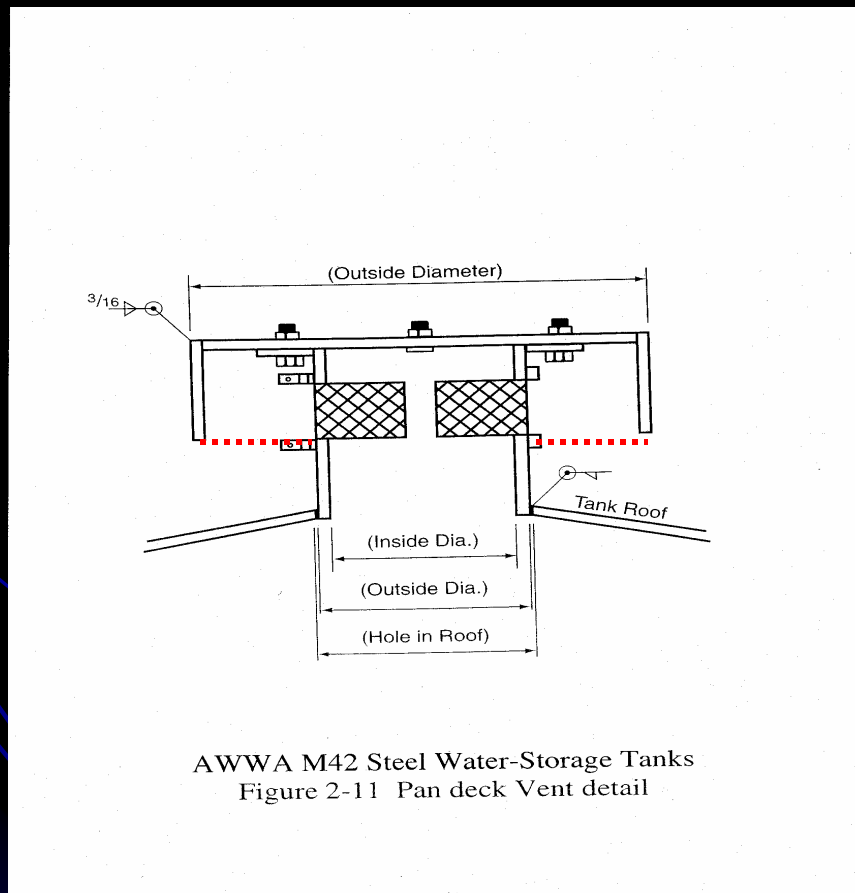
# *Storage Tank Venting*

## *R309-545-15*

- Inverted Vent – Be downturned a minimum of two inches below any opening or shielded to prevent the entrance of surface water and rainwater.
- Open Discharge – On buried structures, have the discharge a minimum of 24 inches above the earthen covering.

# ***Pan Deck Vent*** (AWWA M42 Design)

This no longer meets our tank vent standard, unless the cap extends 2" below the opening.



# ***Tank Vent***



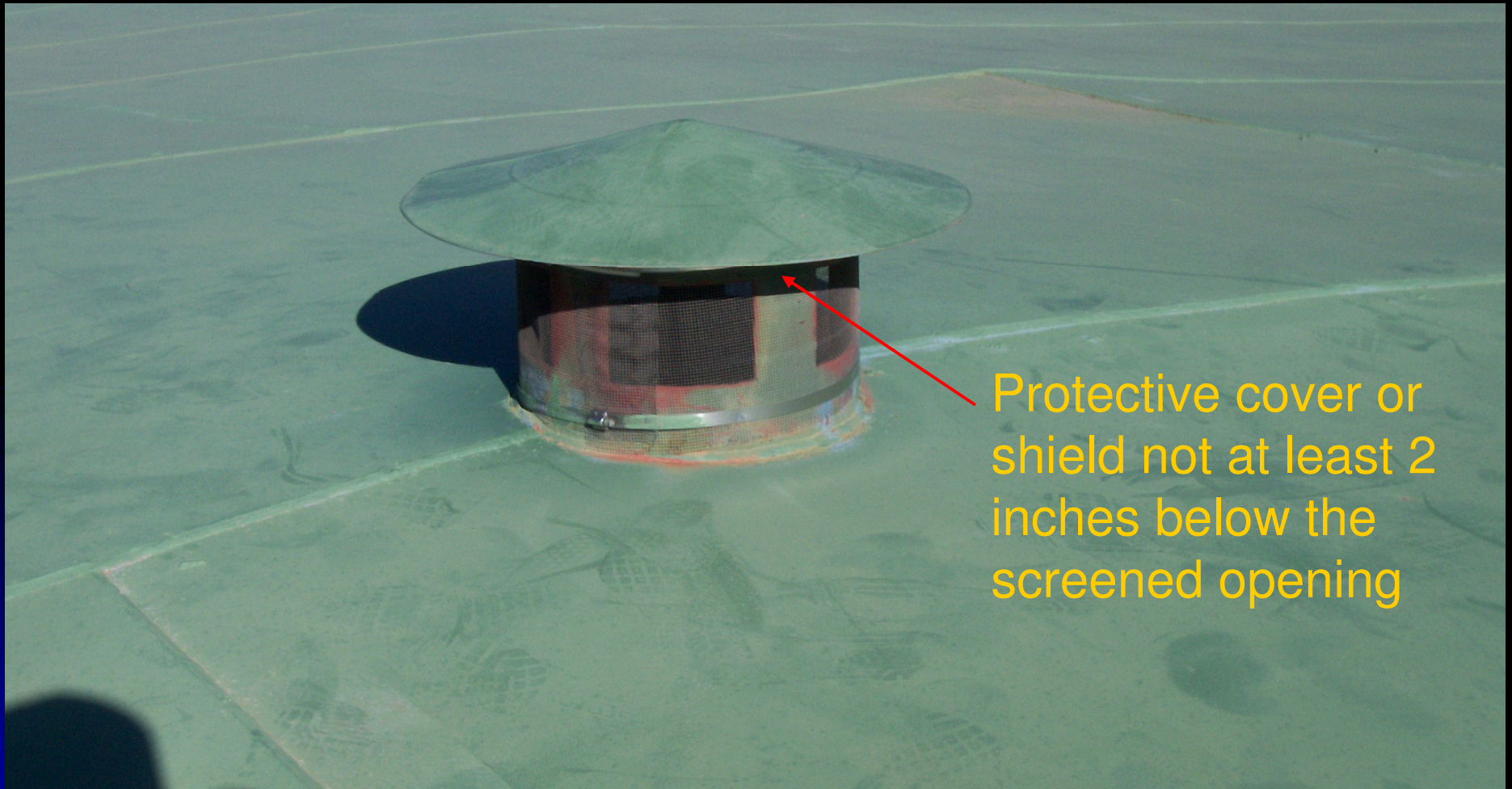
Properly down  
turned & screened  
(#14 mesh screen  
with #4 protective  
screen)

Clearance of 24  
inches or greater  
above grade



# ***Tank Vent***

*This does NOT meet the tank vent standard.*



Protective cover or shield not at least 2 inches below the screened opening

## VI. Resolving Significant Deficiencies

- 450+ violation letters sent
- July 31, 2011 deadline & consequence
- Primary Contact
  - John Oakeson (801) 536-0057
  - Ying-Ying Macauley (801) 536-4188
- A surge of exception requests & technical reviews

# *Significant Deficiency Options*

1. Correct deficiency and notify DDW
2. Request exception-to-rule with justifications
3. Request technical review or re-evaluation
  - Storage capacity requirement
  - Source requirement
4. Enter into a Corrective Action Plan with DDW
5. Do nothing & face enforcement actions from state and EPA



- Attach supporting document

Utah Division of Drinking Water  
IPS Deficiency Correction Notice

Water System Name \_\_\_\_\_

Water System ID #UTAH\_\_\_\_\_

### Instructions

Please use this form to report the correction of sanitary survey deficiencies identified on your IPS report. List the individual Facility ID (where applicable), deficiency code, how deficiency was corrected and the date of the correction below. You may attach a copy of your IPS report with the date of the correction noted on the report. Pictures of corrections or a brief description of the corrections are encouraged. Include the name of the facility and the correction date on any documentation you provide.

[illegible]

I certify that the information submitted with this report is true and accurate. You may electronically sign this form by typing your name in the Signature block.

\_\_\_\_\_

Print Name

Signature \_\_\_\_\_

~~Date~~

Corrections listed on attached IPS report ☐

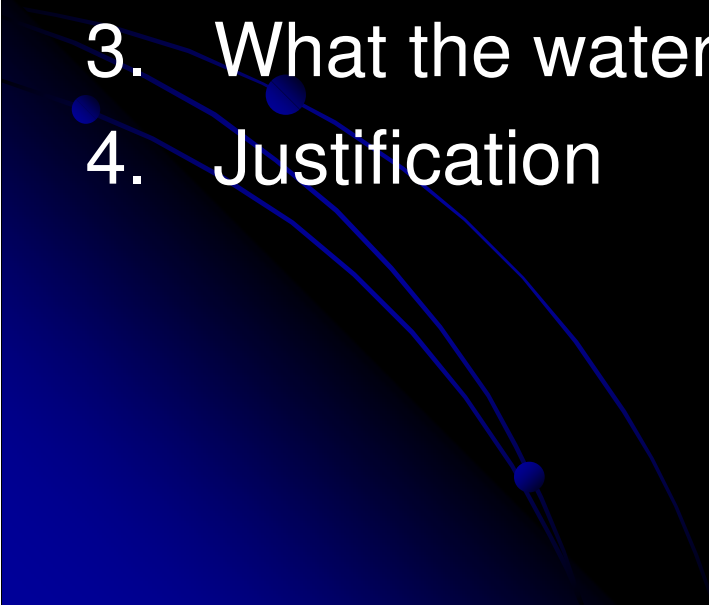
Supportive documentation attached ☐

DDW Approval

Date      /      /

# ***How to Request for Exception-to-Rule***

Submit a written request to Executive Secretary with:

1. Citation of specific rule
  2. A detailed explanation of why the conditions of rule cannot be met for which facility
  3. What the water system proposes in lieu of rule
  4. Justification
- 



# *Exception to Spring Fencing Requirement*





# *Exception to Spring Fencing Requirement*

1. Request exception to R309-515-7(7)(e).
2. Sunshine Spring (WS001) can't meet the rule because of steep terrain.
3. Propose to conduct monthly inspection of spring collection area and diversion channel during operating months.
4. No cattle grazing activity; source protection ordinance exists; PWS owns and has control of the spring area; etc.



## ***Exception to Spring Flow Measuring Device Requirement***

1. Exception to R309-515-7(7)(h).
2. Forest Spring (WS002) can't meet the rule because of cost & partial or variable flow.
3. Propose to conduct the beginning and the end of the season & monthly flow measurements during operating months using bucket and stop watch.
4. Maintain spring flow records for DDW review.

# *Exception to Storage Volume Requirement*

1. Exception to R309-510-8.
2. RV Park Tank (ST001) can't meet the rule because of cost & lack of land/elevation.
3. Propose to install dual well pump and a backup generator.
4. Well capacity far exceeds peak day demand; no fire demand; has a back up system to meet the intent of the rule.

# ***Exception to Water/Sewer Lines Minimum Separation Requirements***

1. Exception to R309-550-7(1).
2. Can't meet the rule at Center St./200 E because of existing 24" sewer main & narrow road
3. Propose to install flowable fill between sewer and water lines & use fusible PVC for waterline within 50 ft of both sides of the crossing.
4. Minimize risk by eliminating joints & no known high ground water table in the area.

# Where can I find the Rules?

## <http://drinkingwater.utah.gov/>

Utah: DEQ: DDW - Microsoft Internet Explorer

Address <http://www.drinkingwater.utah.gov/>

UTAH.GOV SERVICES | AGENCIES

Search all of Utah.gov »

# Utah

## Department of Environmental Quality

### Division of Drinking Water

| [DEQ Home](#) | [DDW Home](#) | [A-Z Index](#) | [Boards](#) | [Contacts](#) | [Laws & Rules](#) | [Online Services](#) | [Search DEQ](#) |

| [Backflow Technicians](#) | [Certified Operators](#) | [Consumers](#) |  
| [Consultants](#) | [Water Suppliers](#) |

### Welcome to the Division of Drinking Water

#### Substantive Change to Proposed Rule R309-110-4 and R309-520

On November 4, 2010, the Drinking Water Board authorized the Division staff to initiate the rulemaking process to revise R309-110-4 (Definitions) and R309-520 (Disinfection Rule) to include emerging disinfection/ treatment technologies and to add specificity in construction standards. We received valuable comments from renowned experts and water treatment professionals during the public comment periods. Modifications to these proposed rule amendments are necessary as a result of the comments we received.

On March 3, 2011, the Drinking Water Board authorized the Division staff to refile the proposed rule changes, with the modifications as a result of public comments, with the Division of Administrative Rules for publication in the April 1, 2011 Utah Bulletin. This will start a new 30-day formal comment period. If the Division staff, after this new comment

**Kenneth H. Bousfield,**  
P.E.  
Director

[Contact Us](#)

P.O. Box 144830  
Salt Lake City, Utah  
84114-4830

Phone: 801-536-4200  
FAX: 801-536-4211

#### Location

Utah State Office Park  
Building One  
195 North 1950 West  
Salt Lake City, Utah

Search DDW

Drinking Water Board

FAQs

Financial Assistance

**Laws & Rules**

Programs

Records Request

Facility Construction  
Design and Operation

R309-500 through R309-550



# Utah

## Department of Environmental Quality

### Division of Drinking Water

| [DEQ Home](#) | [DDW Home](#) | [A-Z Index](#) | [Boards](#) | [Contacts](#) | [Laws & Rules](#) | [Online Services](#) | [Search DEQ](#) |



Search DDW

[Drinking Water Board](#)

[FAQs](#)

[Financial Assistance](#)

[Laws & Rules](#)

[Programs](#)

[Records Request](#)

[Emergencies](#)

[Forms](#)

[Shopping Cart](#)

[DDW Home](#) > [Programs](#)

### Drinking Water Programs

- [Backflow Technician Certification](#)
- [Capacity Development](#)
- [Construction Assistance Programs](#)
- [Consumer Confidence Reports](#)
- [Monitoring and Reporting](#)
- [Operator Certification](#)
- [Plan Review](#)
- [Sanitary Surveys](#)
- [Source Protection](#)

# Questions?

Utah Division of Drinking Water

Ying-Ying Macauley

[ymacauley@utah.gov](mailto:ymacauley@utah.gov)

Tel: (801) 536-4188

or

Nathan Lunstad

[nlunstad@utah.gov](mailto:nlunstad@utah.gov)

801-536-0039

